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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,265	05/17/2005	Kazuhiro Hattori	123935	3873

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EXAMINER	
OLSEN, ALLAN W	

ART UNIT	PAPER NUMBER
1792	

MAIL DATE	DELIVERY MODE
06/03/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/535,265	HATTORI ET AL.	
	Examiner	Art Unit	
	Allan Olsen	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,9-14,16 and 17* is/are pending in the application.

4a) Of the above claim(s) *16 and 17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9 and 11-14* is/are rejected.

7)☐ Claim(s) *10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 16 and 17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on September 10, 2007.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2004/0191577 of Suwa et al. (hereinafter, Suwa).

Suwa teaches a method of etching a magnetic recording medium. Suwa teaches forming a multilayered mask comprising layers 24A, 34 and 36, overlying a continuous recording layer (32). Suwa teaches imprinting a concavo-convex pattern into the upper most masking layer (resist layer) and transferring the pattern through each successive layer and eventually etching the magnetic layer, thereby dividing the continuous magnetic layer into a number of divided recording elements (see figures 3-6 and [0073]). Suwa teaches removing the resist layer (silicon containing negative resist neb22A) before the continuous recording layer processing step [0074]. Suwa teaches forming mask layer (34) as thin as 100 Á and forming magnetic recording layer (32) up to 300 Á thick [0071]. Suwa teaches that a portion of mask layer (34) remains after the magnetic recoding layer is etched (see fig. 6). Suwa teaches forming a masking layer from diamond like carbon (DLC), having a lower etching rate in the continuous recording layer processing step than that of the continuous recording layer.

Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suwa, as applied above to claim 1, in view of US Patent 6,884,630 issued to Gupta et al. (hereinafter, Gupta).

Suwa does not teach removing the resist layer and processing the first mask layer (24A) by employing reactive ion etching which uses one of oxygen and ozone as a reactive gas.

Gupta teaches removing DLC by employing reactive ion etching which uses one of oxygen and ozone as a reactive gas.

It would have been obvious to one skilled in the art to remove Suwa's DLC layer with an oxygen RIE plasma because Gupta teaches that DLC readily etched with an oxygen plasma and it does so with out leaving any residue.

Response to Arguments

Applicant's arguments filed February 15, 2008 have been fully considered but they are not persuasive.

Applicant argues that claim 1 requires that the resist layer be completely removed before the commencing the continuous recording layer processing step. Applicant argues that Suwa fails to teach this limitation because in figure 5 (see paragraph [0074]) Suwa discloses that a small amount of the continuous recording layer (**32**) is etched while a small amount of the resist layer (**36**) remains. As such, applicant argues Suwa fails to teach a process wherein "the resist layer removal step is performed before the continuous recording layer processing step".

The examiner respectfully disagrees. Specifically, the examiner disagrees with applicant's assessment of what is required by claim 1. Claim 1 includes the following recitation (with emphasis added):

> "*a continuous recording layer processing step of processing the continuous recording layer in the pattern by dry etching based on the first mask layer to divide the continuous recording layer into a number of divided recording elements*"

The examiner argues that the continuous recording layer processing step is delineated by the division of the continuous recording layer into a number of divided recording elements – not by the small amount of etching that Suwa depicts in figure 5. Note that in figure 6, the resist layer is completely removed. One skilled in the art would expect the small amount of resist (**36**), shown in figure 5 but not in figure 6, to be completely removed well before the continuous recording layer is divided into a number of divided recording elements.

In addition, applicant notes that claim 1 requires that there be two mask layers and a resist layer formed over the continuous recording layer. In this regard, applicant agues that Suwa's intermediate layer (**24A**), which the examiner correlates to the claimed first mask layer, "is not a mask layer within the meaning of claim 1", in part because intermediate layer (**24**) remains in Suwa's final product. As such, applicant argues that Suwa fails to teach the provision of two mask layers and a resist layer over the continuous recording layer and also that Suwa fails to suggest processing one mask layer based on the other mask layer.

In response the examiner contends that Suwa's intermediate layer (**24**) functions as one layer of a multi-layered mask while underlying layers are being processed. The fact that intermediate layer (24) remains in Suwa's final product does not diminish the role it plays during the fabrication process.

Allowable Subject Matter

Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 571-272-1441. The examiner can normally be reached on M, W and F: 1-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Allan Olsen/
Primary Examiner, Art Unit 1792